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Two Species of the Primitive Oribatid Genus *Gehypochthonius* from Japan

With 6 Text-figures

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Abstract Two species of the genus *Gehypochthonius* belonging to the family Gehypochthoniidae (Acari: Oribatei) are described: *G. rhadamantus* from Tanzawa and Nikko, and *G. frondifer* sp. nov. from Mt. Fuji. Distinguishing characters of all the three species of the genus, including *G. xarifae* Strenzke, are also summarized in a table.

The genus *Gehypochthonius* was established by Jacot (1963) with the type-species *G. rhadamantus* from North America. It had long been monotypic, until Strenzke (1963) described the second member, *G. xarifae* from Maldive Island. The latter author gave detailed description of his species as well as its post-embryonic development, and created the family Gehypochthoniidae for the genus. In 1964, I reported for the first time a gehypochthoniid (*G. rhadamantus*) from Japan based on the material from Tanzawa, Central Honshu. Unfortunately, however, my paper was published in anonymous status by a careless mistake of the editor. I report here again the species with description and figures, together with the other new species of the same genus.

Gehypochthonius rhadamantus Jacot

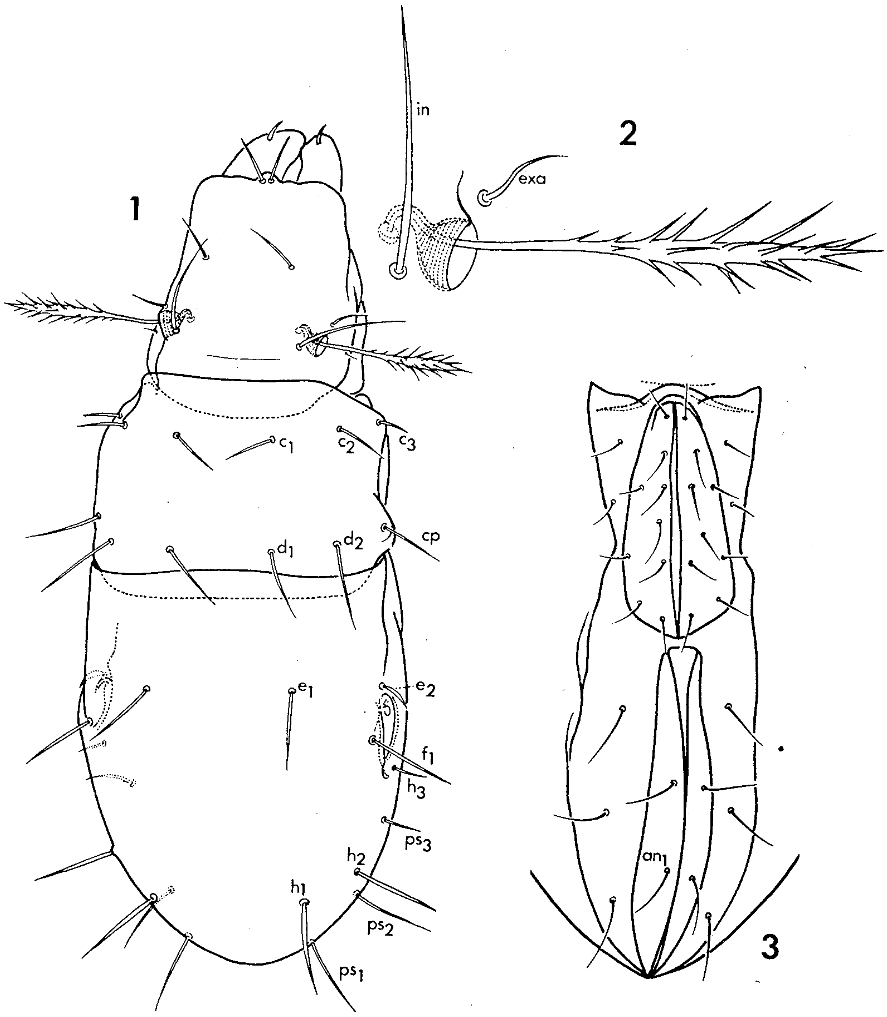
(Figs. 1–3)

Gehypochthonius rhadamantus Jacot, 1936, p. 22, pl. 1, figs. 1–2.——Aoki, 1964, p. 389, fig. 4–41.

Material examined. Three specimens: At the top of Mt. Hirugatake of Tanzawa, Kanagawa-ken, 4–XI–1962, Y. Kitawawa leg., from soil under the vegetation of *Fagus crenata* Blume; 2 specimens: Jigoku-zawa of Nikko, Tochigi-ken, 24–VIII–1961, J. Aoki leg., from litter under the vegetation of *Tsuga diversiflora* Masters.

Measurement. Body length: 262–275 μ; width: 105–112 μ.

Prodorsum. Rostral tectum has a small median projection on its anterior



Figs. 1–3. *Gehypochthonius rhadamantus* Jacot.——1. Dorsal.——2. Bothridium and sensillus, with setae in their vicinity.——3. Ano-genital region.

margin. Rostral setae situated close together on the projection; they are almost straight, being directed anterolaterad and somewhat upward. Lamellar setae a little longer than rostrals and directed upward. Interlamellar setae longer than lamellars. Anterior exobothridial seta nearly as long as rostral seta; posterior exobothridial seta minute. All the setae mentioned above glabrous. Sensillus directed laterad, the apical portion being swollen to form a spindle-shaped head, which bears more than 20 bristles on the whole sides.

Notogaster. Notogaster divided transversely into two sections; the anterior margin of the posterior section with a straight edge, overlapping the posterior part of the anterior section which has a gently curved edge. Six pairs of setae found on the anterior section; their relative length: d_2, d_1, $cp > c_1$, $c_2 > c_3$; seta d_2 the longest, being about 2.5× as long as c_3 and also a little longer than d_1 as well as cp; seta c_3

located a little anterior to the level of c_1. Nine pairs of setae found on the posterior section; setae e_2, h_3 and ps_3 distinctly shorter than the remainder. All the notogastral setae glabrous, without barbation; they seem to be simple setiform under low magnification, but a close examination reveals that they have a slightly lanceolate form, especially in the cases of the posterior setae, h_1 and h_2, but never so distinctly as those in *G. xarifae*.

Ano-genital region. Setae in ano-genital region arranged as in Fig. 3, fundamentally in the same way as shown by Jacot; anal plate with 2 setae which are not pushed together forward, but well separated from each other, so that an_1 is located between the levels of ad_1 and ad_2. Genital opening elongate oval, being somewhat narrowed anteriorly; each plate with 6 setae along the median margin and 3 setae near the lateral margin of the plate. Each aggenital plate with 2 setae.

Table 1

Characters for distinguishing the species of the genus *Gehypochthonius* Jacot.

	G. rhadamantus Jacot	*G. xarifae* Strenzke	*G. frondifer* sp. nov.
Rostral setae	straight	weakly curved	weakly curved
Prodorsal setae (*ro*, *le* and *in*)	glabrous	minutely barbed	glabrous
Sensillus	spindle-shaped, with short spines on the whole sides	setiform, with long spines on one side	setiform, with long spines on one side and minute spines on the other
Seta d_1	slightly longer than c_1	distinctly longer than c_1	slightly longer than c_1
Seta d_2	longer than *cp*	shorter than *cp*	shorter than *cp*
Seta c_3	located a littel anterior to c_1	located a little anterior to c_1	located a little posterior to c_1
Several posterior notogastral setae	hardly dilated	weakly dilated	strongly dilated
Genital plate	with 9 setae	with 11 setae	with 10 setae
Anal seta an_1	posterior to mid-distance along anal opening	anterior to mid-distance along anal opening	slightly posterior to mid-distance along anal opening
Distribution	N. America and Japan	Maldive Island	Japan

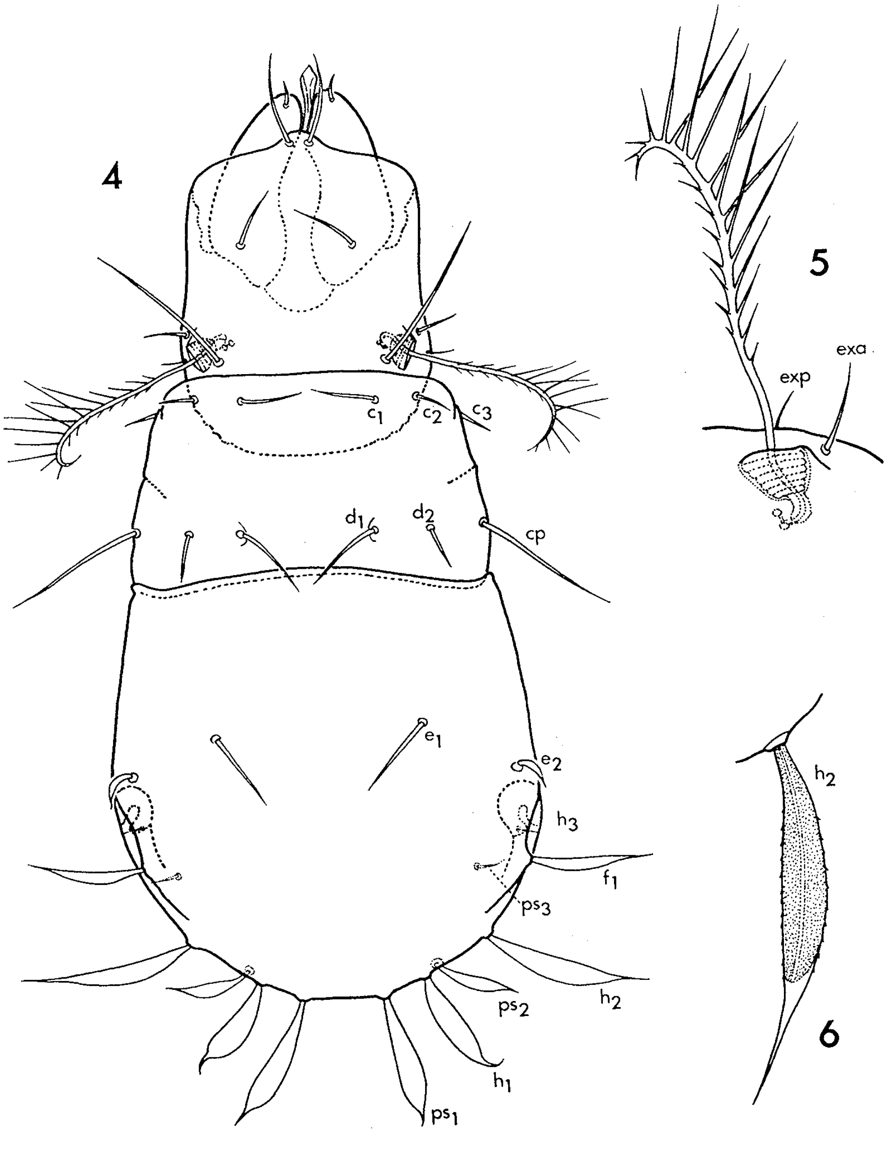
Gehypochthonius frondifer sp. nov.

(Figs. 4–6)

Material examined. Holotype (NSMT–Ac 8567, on slide): Sengen-jinja on the east slope of Mt. Fuji, Yamanashi-ken, 28–V–1974, J. Aoki leg., from litter under the plantation of *Larix leptolepis* Gordon.

Measurement. Body length: 290 μ; width: 142 μ.

Prodorsum. Rostral setae situated on a weak protrusion of rostral tectum; they are weakly curved inward and nearly as long as lamellar setae. Interlamellar



Figs. 4–6. *Gehypochthonius frondifer* sp. nov.——4. Dorsal.——5. Bothridium and sensillus, with exobothridial setae.——6. Notogastral seta h_2.

setae about twice as long as rostral ones. Anterior exobothridial seta shorter than lamellar seta; posterior exobothridial seta distinctly shorter than *exa*, being about as long as the diameter of bothridial opening. All the prodorsal setae mentioned above almost glabrous. Sensillus directed lateroposteriad, nearly of the same thickness throughout its length except the apex, being provided with about 15 spines on one side and 8 on the other; most of the former spines conspicuously long, while the latters are minute.

Notogaster. Transverse groove dividing notogaster into two parts weakly convex. Among the 6 pairs of setae on the anterior section, c_3, c_2 and d_2 short, c_1

and d_1 medium, and *cp* considerably long; seta *cp* about 4× as long as c_3 and 2× as long as d_1; d_1 only a little longer than c_1; seta c_3 located on the level a little posterior to that of c_1. Among the 9 pairs of setae on the posterior section, only 7 pairs are visible in dorsal aspect, because the remaining 2 pairs are small and situated ventrally; seta e_1 thin and long; ps_3 and h_3 fine and short; e_2 small and somewhat dilated; the remaining setae f_1, h_1, h_2, ps_1 and ps_2 large and dilated in leaf-shape; ps_1, h_1 and h_2 among them are especially broad, being minutely serrated marginally and each containing an opaque part which is rounded at apical end (Fig. 6).

Ano-genital region. Two pairs of anal setae situated not so anteriorly as in *G. xarifae*, their position being nearly the same as that in *G. rhadamantus*, but somewhat more posterior, so that the posterior anal seta (an_1) is situated slightly posterior to the mid-distance along anal aperture. Each genital plate with 7 setae along the median margin and 3 setae near the lateral margin. Two pairs of aggenital and 3 pairs of adanal setae are present.

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* The name of the author was mislaid during the galley-proof reading.